

## What is claimed is:

- Sub A1 1. A method for imparting antimicrobial properties to a surface comprising:
- a) selecting a photosensitizer capable of being activated by an environmental condition under which said surface is required to exhibit antimicrobial activity;
  - b) preparing a photosensitizer containing formulation from said photosensitizer in a topically available form; and
  - c) applying said photosensitizer containing formulation to said surface; and
  - d) exposing said photosensitizer to said environmental condition.
2. The method of claim 1 wherein said environmental condition is ambient light.
- Sub A2 3. The method of claim 1 wherein said environmental condition is a specific illumination source.
4. The method of claim 1 wherein said topically available form is as a spray.
5. The method of claim 1 wherein said topically available form is a solution.
- Sub A3 6. The method of claim 1 wherein said photosensitizer is bonded to said surface by a linking mechanism, said linking mechanism being cleavable by (singlet oxygen.)
7. The method of claim 6 wherein said photosensitizer is preferentially modified to have a targeting molecule attached, said targeting molecule designed to target and be attractive to (problem microbes.)
8. The method of claim 6 wherein said surface is exposed to short periods of said environmental condition to release (singlet oxygen) and cleave said linking mechanism, followed by a period of no exposure to said environmental condition to allow microbes to contact or absorb said photosensitizer, and then long periods of said environmental condition to produce singlet oxygen to destroy said microbes.
9. A photosensitizer containing formulation for imparting antimicrobial properties to a surface comprising a photosensitizer, in a topically available form, capable of being activated by environmental conditions under which said surface is required to exhibit antimicrobial activity.

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10. The photosensitizer containing formulation of claim 9, wherein said photosensitizer is preferentially modified to have a targeting molecule attached, said targeting molecule designed to target and be attractive to problem microbes.
11. A product having a surface coated with a photosensitizer containing formulation of claim 9, said surface having a removable protective layer that protects said photosensitizer from activation illumination and oxygen.
12. The product of claim 11 wherein said removable protective layer is selected from the group consisting of metal foil, plastic film and paper sheeting.
13. A product having a multitude of layers, where each of said layers is comprised of a sheet having an upper surface coated with a photosensitizer containing formulation, each of said sheets protecting an upper surface on a next lower sheet, from activation illumination and oxygen.
14. The product of claim 13 wherein said photosensitizer is preferentially modified to have a targeting molecule attached, said targeting molecule designed to target and be attractive to problem microbes.

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Sub A4